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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/768,650	02/02/2004	Yoshiyuki Nakanishi	106145-00078	7433

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EXAMINER	
TRAN, BINH Q	

ART UNIT	PAPER NUMBER
3748	

DATE MAILED: 06/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/768,650	NAKANISHI ET AL.	
	Examiner	Art Unit	
	BINH Q. TRAN	3748	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4 and 7-12* is/are rejected.

7)☒ Claim(s) *5 and 6* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *02/02/2004*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Double Patenting

Claims 14, and 7-12 are rejected under the judicially created doctrine of double patenting over claims 1-10 of U. S. Copending Application No. 10/792,927 since the claims, if allowed, would improperly extend the "right to exclude" already granted in the patent.

The subject matter claimed in the instant application is fully disclosed in the patent and is covered by the patent since the copending application and the application are claiming common subject matter, as follows: the application claims are merely broader than the copending application claims.

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claims 1-4, and 11(1-4) are rejected under 35 U.S.C. 102 (b) as being anticipated by Penetrante et al. (Penetrante) (Patent Number 6,038,854).

Regarding claim 1, Penetrante discloses an exhaust gas purification system equipped, from an upstream side toward downstream side through which an exhaust gas flows, with a plasma reactor (e.g. 70, 74, 120, 142, 162) and a catalyst unit (e.g. 16, 136, 168) charged with a catalyst

acting on NOx in said exhaust gas in this order, and equipped with a reducing agent supplying device (e.g. 54) to supply a reducing agent at an upstream side of said plasma reactor (e.g. 70, 74, 120, 142, 162), wherein said catalyst has an NO2 adsorptive catalyst layer and an NO2 selective reduction catalyst layer contacting the NO2 adsorptive catalyst layer (e.g. See col. 7, lines 9-67; cols. 8-9, lines 1-67).

Regarding claim 2, Penetrante further discloses that the NO2 selective reduction catalyst layer is disposed on a surface of said catalyst, and said NO2 adsorptive catalyst layer is disposed inside said NO2 selective reduction catalyst layer (e.g. See col. 7, lines 9-67; cols. 8-9, lines 1-67).

Regarding claim 3, Penetrante further discloses that the NO2 adsorptive catalyst layer is a porous support to be made to support at least one kind of alkali metal, alkali earth metal, and rare earth metal; and said NO2 selective reduction catalyst layer is a porous support to be made to support silver (e.g. See col. 7, lines 9-67; cols. 8-9, lines 1-67).

Regarding claim 4, Penetrante further discloses that the NO2 adsorptive catalyst layer is a porous support to be made to support at least one kind of alkali metal, alkali earth metal, and rare earth metal; and said NO2 selective reduction catalyst layer is a porous support to be made to support silver (e.g. See col. 7, lines 9-67; cols. 8-9, lines 1-67).

Regarding claims 11(1-4), Penetrante further discloses a NOx selective reduction catalyst unit (e.g. 34, 78, 136, 168) charged with a NOx selective reduction catalyst is disposed at a downstream side of said catalyst unit (e.g. See col. 5, lines 40-67; col. 6, lines 1-59).

Claim 1 is rejected under 35 U.S.C. 102 (b) as being anticipated by Cho et al. (Cho) (Patent Application Number US 2004/0107695 A1).

Regarding claim 1, Cho discloses an exhaust gas purification system equipped, from an upstream side toward downstream side through which an exhaust gas flows, with a plasma reactor (e.g. 56,100) and a catalyst unit (e.g. 54, 58, 124) charged with a catalyst acting on NOx in said exhaust gas in this order, and equipped with a reducing agent supplying device (e.g. 126, 128) to supply a reducing agent at an upstream side of said plasma reactor (e.g. 56,100), wherein said catalyst has an NO2 adsorptive catalyst layer and an NO2 selective reduction catalyst layer contacting the NO2 adsorptive catalyst layer (e.g. See Page 4, Paragraphs 0036-0056).

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 7-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Penetrante in view of design choice.

Regarding claims 7-10, and 12, Penetrante discloses all the claimed limitation as discussed above except the silver support amount of said NO2 selective reduction catalyst layer is not less than 1.5 mass percent and not more than 5 mass percent for the mass of the NO2 selective reduction catalyst layer.

Regarding the specific range of the catalyst air ratio and the catalyst temperature, it is the examiner's position that a range between about not less than 1.5 mass percent of silver support amount, and not more than 5 mass percent for the mass of the NO2 selective reduction catalyst layer, would have been an obvious matter of design choice well within the level of ordinary skill in the art, depending on variables such as mass flow rate of the exhaust gas, as well as the concentration of oxygen in the exhaust gas, properties of materials for making the NOx storage catalyst, and the controlled temperature of the catalytic converter. Moreover, there is nothing in the record which establishes that the claimed parameters present a novel or unexpected result (See In re Kuhle, 562 F. 2d 553, 188 USPQ 7 (CCPA 1975)).

Under some circumstances, however, changes such as these may impart patentability to a process if the particular ranges claimed produce a new and unexpected result which is different in kind and not merely in degree from the results of the prior art. In re Dreyfus, 22 CCPA (Patents) 830, 73 F.2d 931, 24 USPQ 52; In re Waite et al., 35 CCPA (Patents) 1117, 168 F.2d 104, 77 USPQ 586. Such ranges are termed "critical" ranges, and the applicant has the burden of proving such criticality. In re Swenson et al., 30 CCPA (Patents) 809, 132 F.2d 1020, 56 USPQ 372; In re Scherl, 33 CCPA (Patents) 1193, 156 F.2d 72, 70 USPQ 204. However, even though applicant's modification results in great improvement and utility over the prior art, it may still not be patentable if the modification was within the capabilities of one skilled in the art. In re Sola, 22 CCPA (Patents) 1313, 77 F.2d 627, 25 USPQ 433; In re Normann et al., 32 CCPA (Patents) 1248, 150 F.2d 627, 66 USPQ 308; In re Irmscher, 32 CCPA (Patents) 1259, 150 F.2d 705, 66 USPQ 314. More particularly, where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation. In re Swain et

al., 33 CCPA (Patents) 1250, 156 F.2d 239, 70 USPQ 412; Minnesota Mining and Mfg. Co. v. Coe, 69 App. D.C. 217, 99 F.2d 986, 38 USPQ 213; Allen et al. v. Coe, 77 App. D.C. 324, 135 F.2d 11, 57 USPQ 136.

Regarding claims 11 (7-10, 12), Penetrante further discloses a NOx selective reduction catalyst unit (e.g. 34, 78, 136, 168) charged with a NOx selective reduction catalyst is disposed at a downstream side of said catalyst unit (e.g. See col. 5, lines 40-67; col. 6, lines 1-59).

Allowable Subject Matter

Claims 5-6 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Since allowable subject matter has been indicated, applicant is encouraged to submit formal drawings in response to this Office action. The early submission of formal drawings will permit the Office to review the drawings for acceptability and to resolve any informalities remaining therein before the application is passed to issue. This will avoid possible delays in the issue process.

Prior Art

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure and consists of five patents:

Balko et al. (Pat. No. 6176078), Broer et. al. (Pat. No. 6247303), Kieser et al. (Pat. No. 5746051), Gieshoff et al. (Pat. No. 6334986), and Pentrante et al. (Pat. No. 6374595) all discloses an exhaust gas purification for use with an internal combustion engine.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Binh Tran whose telephone number is (571) 272-4865. The examiner can normally be reached on Monday-Friday from 8:30 a.m. to 5:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas E. Denion, can be reach on (571) 272-4859. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and for After Final communications.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

BT
May 28, 2005

Binh Q. Tran
Patent Examiner
Art Unit 3748